Abstract Submitted
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Planar Shock Acceleration of a Droplet-Seeded Gas Jet: Three-Dimensional Features[1] PETER VOROBIEFF, JOSEPH CONROY, MICHAEL ANDERSON, ROSS WHITE, C. RANDALL TRUMAN, The University of New Mexico, SANJAY KUMAR, University of Texas - Brownsville — When a planar shock wave generated in a shock tube accelerates a nominally two-dimensional density interface, the large-scale flow structure is usually regarded as quasi-two-dimensional. We examine the limitations of this assumption due to interaction with wall boundary layers, growth of three-dimensional instabilities, and other factors. The initial conditions are produced by a laminar cylindrical jet of gas vertically injected into the test section of the shock tube. Flow visualization images in several planes intersecting the flow reveal a non-trivial three-dimensional structure. Experiments are conducted both for "classical" Richtmyer-Meshkov instability and for its multiphase analog induced by particle seeding.

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